

# Chapter 9

## Conservation and Efficiency

### Rethinking Energy Use

Today, people are rethinking the policy of unchecked energy use. Knowing that natural resources are limited, conservation and energy efficiency have become popular.

What is energy conservation? It involves finding ways to use less energy. Conservationists work hard to prevent waste.

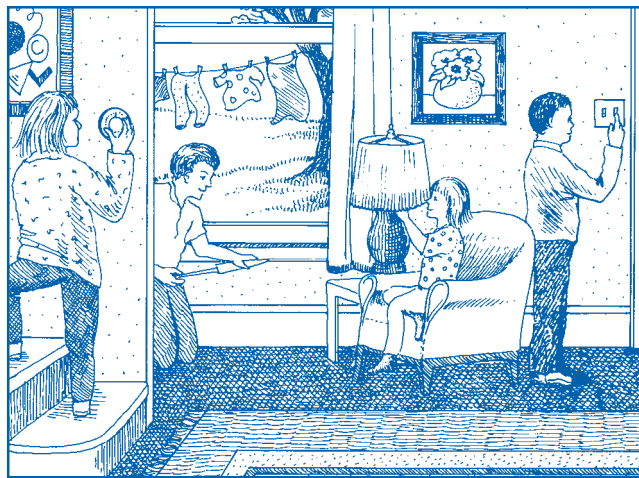
Energy efficiency goes hand in hand with conservation. Its focus is on getting the maximum benefit from each energy resource consumed. For example, it involves determining the least costly method of generating electricity. It also means buying the appliance that can be operated using the least amount of power.

South Carolina is committed to energy conservation and energy efficiency. Because the state must import most of its energy, wise energy use is especially important.

### Working Together To Conserve

Everyone has a role to play in promoting energy efficiency. And if everyone works together, the life of our energy resources can be extended. While energy needs to be used efficiently in all

sectors, there are three areas where everyone can make a difference — at home, at school and in transportation. When reading the conservation ideas presented here, think about the energy practices used at school and home.



### Home Energy Efficiency

About one-fifth of all energy use takes place in homes. In South Carolina, most residential energy use goes to heating and cooling homes. This is followed by water heating, appliance use and lighting.

Many specific activities have been identified to reduce home energy use. Some of these cost money in the beginning but will generally pay for themselves over time. All of them involve a commitment of effort. Before trying them, talk with the rest of your family.

### HEATING AND COOLING CONSERVATION

- ✓ Adjusting your thermostat is the best and least costly conservation measure. Try to get used to lower temperatures in winter and warmer temperatures in summer. See if your family will agree to lower the thermostat to 68 degrees in winter and raise it to 78 degrees in summer. Your family will save five to six percent on their utility bill.

- ✦ Locate the thermometer on an inside wall that's not near sunlight, vents or lamps. This will provide an accurate reading of the temperature.
- ✦ Dress appropriately. Keeping comfortable has much to do with how well you insulate or ventilate your own body. Try loose fitting clothing, open collars and open weaves for hot weather, layers of clothes and closed collars for colder weather.
- ✦ In cold weather, use more blankets or a down comforter.
- ✦ In the winter months, leave shades, blinds, and curtains open on sunny days to make use of the sun's heat. Close them on cloudy days to prevent heat loss. Reverse the process in the summer.
- ✦ Close the fireplace damper when it's not in use to prevent heat loss.
- ✦ Don't cover the top of heating or cooling vents with knick-knacks, furniture or belongings. This makes it necessary to use more energy. For the same reason, don't hide vents behind draperies.
- ✦ Help cool weather come inside. The more cool air that comes inside, especially at night, the better. Experiment to see which windows and doors to open or close to create the best flow of cool air throughout your home.
- ✦ Let hot air out. Encourage your parents to open the upper vents in your attic and make sure no lower vents are blocked.
- ✦ Since hot air rises, open the upper part of double hung sash windows and, in a two story house, the upstairs windows.
- ✦ Let breezes inside. If windows are blocked by shrubs or tree foliage, the bushes might need pruning.
- ✦ An exhaust fan in a window can push out warm air and pull in cool air. A window fan is more economical to run than an air conditioner. A window fan in an apartment or one-story house should be in a window on the warmest side; in a two-story house, put it in an upstairs window.
- ✦ Use ceiling fans if they are in your home. In the winter, run them in reverse to circulate warm air. In the summer, run them to create a downward breeze.
- ✦ If you have central air conditioning, don't close off unused rooms or shut off vents. Rather than saving energy, this makes the system work harder.
- ✦ It may be easier to move yourself into a nice, warm sunny room on a cold day, say to do homework or eat a snack, than it is to move that free solar heat to a cooler part of your home. Upholstered furniture, like a big armchair or sofa, will soak up the heat very nicely when placed in a sunny spot.
- ✦ Encourage your family to use storm doors and windows. Make sure the storm doors are fastened tightly and the doors are closed properly.
- ✦ When it's time to paint the outside of your home, suggest using light colors. Since South Carolina's climate tends to be warm, light-colored paint is a good choice because it reflects sunlight.

### **WATER HEATING CONSERVATION**

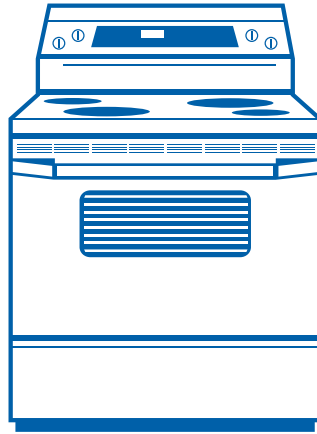
- ✦ Use hot water wisely. Don't let water run. Don't use hot water if cold or lukewarm will do. For example, run the garbage disposal with cool water, not warm.
- ✦ Try to get in the habit of taking a shower instead of a bath. Showers typically use less hot water. Water-saving shower heads will typically pay for themselves in a few months.
- ✦ Watch and listen for leaky faucets. A two-cent washer can save hundreds of gallons of water in a year.
- ✦ Wash clothes in cold water when possible.

## APPLIANCE CONSERVATION

- ✦ Cut back on the amount of water used for boiling eggs, potatoes and other foods. The more water used, the more energy is needed to make it boil or simmer.

- ✦ Use pots that are the same size as a burner so that heat doesn't escape.

- ✦ Make sure pot and pan lids fit tightly. This keeps heat inside. It also makes the food cook faster.



- ✦ If you have a toaster oven or electric frying pan, use it. They use half the electricity of an electric oven.
- ✦ Microwaves energy. Microwaves not only cook food in one-fourth the time, they use 30 to 70 percent less electricity.
- ✦ Avoid peeking in the oven. It not only makes a soufflé fall, it drops the oven's temperature 25-50°F every time it's opened.
- ✦ Periodically vacuum the condenser coils on the back or bottom of your refrigerator. (Unplug it first!) Dust acts as an insulator on the cables, making the refrigerator work harder.
- ✦ Refrigerators and freezers work best when they are full. But items need to have space between them so air can circulate.
- ✦ Don't place hot or uncovered foods in the refrigerator. It takes increased energy to cool hot foods. Uncovered foods will lose moisture to the refrigerator.
- ✦ Test to make sure the refrigerator and freezer seals are working by placing a dollar bill lengthwise along the edge and closing

the door. If the dollar falls, your appliance needs to have the seal replaced. An airtight seal helps the appliance work efficiently.

- ✦ Utility companies suggest that you put petroleum jelly along refrigerator and freezer seals to make them last longer.
- ✦ Defrosting frozen foods in the refrigerator helps the refrigerator stay cool. It also uses less energy than microwave defrosting and, in the case of Thanksgiving turkey, is safer than defrosting on a counter top where bacteria might grow.
- ✦ A freezer with more than 1/4 inch of ice needs to be defrosted to save energy.
- ✦ Always wait until there is a full load to run the dishwasher, washer or dryer. But full doesn't mean overloaded. Overloading wastes energy and rarely gets the job done. On a sunny day, think about using the solar dryer — the clothes line.
- ✦ Turn off the TV, radio or video game when they're not in use.
- ✦ If you have an "instant on" TV, part of the TV is actually on all the time. One way to turn this type of TV off is to plug it into a socket that is controlled by a light switch and to use that light switch when you turn off the set.
- ✦ Encourage your family to pay attention to the yellow energy tags and labels when buying new appliances. Comparing tags is an excellent way to help your family make an energy-wise choice. The higher the efficiency level, the greater the savings as the appliance is used.

## LIGHTING CONSERVATION

- ✦ Use lower watt bulbs in stairwells, closets and areas that don't require reading light.
- ✦ To make a room brighter, use one bulb of high wattage. For example, one 100 watt

bulb uses less energy than two separate 50-watt bulbs.

- ✦ Use energy-saver bulbs. These give as much light as conventional bulbs but use less energy.
- ✦ Encourage your family to use compact fluorescent lamps (CFLs). These bulbs are comparatively expensive to buy, but are long-lasting and extremely economical over the long run. CFLs last up to 10 times longer than incandescent light bulbs, use 25 percent of the energy and produce 90 percent less heat while producing more light.
- ✦ Suggest using light-colored lamp shades. They reflect 50 percent more light than dark shades.
- ✦ Try placing a lamp in a corner of a room. Here it has two surfaces to reflect off of rather than just one wall.



- ✦ Check for drafts using a homemade “draft detector.” A piece of tissue, parchment, wax paper or plastic wrap can be taped to the bottom of a hanger so that it hangs freely. When this detection device is hung from a window sill or held by a door or near vents and outlets, the hanging material will wave if a draft is present. Again, any problems should be reported to maintenance.

- ✦ Track utility meter readings. Based on this information, school staff can decide if more drastic conservation measures are needed.
- ✦ If your school doesn’t already have a recycling program, start one. Your county or city government can help secure the needed bins and any other supplies. Separating newspapers, glass, plastics and aluminum cans from our other garbage can easily become second nature. Recycling is an fun way to both save energy and protect the environment.
- ✦ Think of other things within your school to recycle like paper (doing two-sided copying), books, art supplies, paper clips and more.

## School Conservation

Because schools are buildings, many of the same ideas can be used. Here are some specific thoughts:

- ✦ If your classroom has its own thermostat, make sure that heaters and air conditioners are turned off (or lowered if the outside temperature is extreme) at the end of the day.
- ✦ Make sure drapes or shades are closed at night to insulate the room.
- ✦ Turn off lights when leaving for recess (if everyone leaves the room), during special activities when the class is on a field trip or assembly, and at the end of the day.
- ✦ Check for broken windows, torn or damaged weather-stripping and caulking and leaky faucets. Report any detected problems to the maintenance staff.

- ✦ Encourage your school to be “precyclers.” This means buying school supplies and cafeteria products that are packaged in recycled paper or are made of recyclable materials. Recycling, like energy conservation, is a state of mind.

## Transportation Conservation

Most of the energy used in the transportation sector comes from petroleum. Because petroleum is a non-renewable resource, saving energy is particularly important.

There are three basic conservation measures to remember:

1. **Increase the number of people riding in a car at one time.** When going to a school function, a sports meet, a party or any other

event, organize a group to ride there together. By riding together, fewer cars need to be driven. Fewer cars on the road means less energy is used. Likewise, encourage your parents to ride to work or meetings in carpools.

2. **Combine trips.** Plan to run all errands after school or work in a systematic fashion.
3. **Switch to more energy-efficient transportation.** Public transportation saves energy. People who ride buses, subways and trains save energy by leaving their cars at home. Any time it's possible take public transportation instead of being driven, think about doing so. Best of all, ride your bike or walk to nearby places.

## Conclusion

Be it in cars, in schools or at home, energy conservation is something everyone can all do. While one person alone makes only a small difference, a whole nation of conservationists makes a huge difference.

In South Carolina, if everyone could conserve 10 percent of the energy used, residents could save more than \$800 million to spend on other things and it would help protect the environment. The responsibility to reduce our energy resources rests within all of us.